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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/509,310	09/27/2004	Alessandro Galbiati	NPTS100001000	1922
22891	7590	08/10/2006	EXAMINER	
DELIO & PETERSON 121 WHITNEY AVENUE NEW HAVEN, CT 06510			PENG, KUO LIANG	
			ART UNIT	PAPER NUMBER

1712

DATE MAILED: 08/10/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/509,310

Applicant(s)

GALBIATI ET AL.

Examiner

Kuo-Liang Peng

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 1/31/05 IDS.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-15 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-15 is/are rejected.
- 7) ☒ Claim(s) 2-4 and 12-15 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>1/31/05, 9/27/04</u> | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Objections

1. Claims 2-4 and 12-15 are objected to because of the following informalities:

In Claim 1 (page 34, line 18), should “in which R” represents a monovalent hydrocarbon group.” be moved to the end of the claim?

In Claim 12, the language regarding the process steps is not considered conventional. Applicants are advised to the terms “obtained by”, etc. with positive steps.

Appropriate correction is required.

Claim Rejections - 35 USC § 112

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claims 2-4 and 7-11 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In Claim 2 (page 34, line 16), it is not clear as to what “hetero-hydrocarbon” and “amino-hydrocarbon” refer to.

A broad range or limitation together with a narrow range or limitation that falls within the broad range or limitation (in the same claim) is considered indefinite, since the resulting claim does not clearly set forth the metes and bounds of the patent protection desired. Note the explanation given by the Board of Patent Appeals and Interferences in *Ex parte Wu*, 10 USPQ2d 2031, 2033 (Bd. Pat. App. & Inter. 1989), as to where broad language is followed by "such as" and then narrow language. The Board stated that this can render a claim indefinite by raising a question or doubt as to whether the feature introduced by such language is (a) merely exemplary of the remainder of the claim, and therefore not required, or (b) a required feature of the claims. Note also, for example, the decisions of *Ex parte Steigewald*, 131 USPQ 74 (Bd. App. 1961); *Ex parte Hall*, 83 USPQ 38 (Bd. App. 1948); and *Ex parte Hasche*, 86 USPQ 481 (Bd. App. 1949). In the present instance, Claim 7 recites the broad recitation "di-, tri- or tetra-valent linear or branched aliphatic alkyl radicals" (line 18), and the claim also recites "preferably from 1 to 50 carbon atoms" (lines 18-19) which is the narrower statement of the range/limitation. The same issue with the word "preferably" and/or "more preferably" appears in Claim 7 (lines 19 and 20), Claim 8 (page 37, line 4), Claim 10 (page 38, lines 2-3) and Claim 11 (page 38, lines 10-11).

In Claim 7 (line 21), "or R⁸" renders the Markush language improper.

Claim Rejections - 35 USC § 102

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

5. Claims 1-9 are rejected under 35 U.S.C. 102(b) as being anticipated by Galbiati (US 6 221 994).

Galbiati discloses polymers prepared by an alkylene glycol di(meth)acrylate and an ethane dithio, followed by reacting with a mercaptoalkyltrimethoxysilane or an alkylmethacrylatetrimethoxysilane. (col. 7 and 8) The alkylene radical in the alkylene glycol di(meth)acrylate can contain 2 to 4 carbon atoms. (col. 6, lines 2-50) The polymers contain -O-C(O)-CH(CH₃)CH₂-S*-CH₂CH₂-S**- linkages that read on the polymers of the claimed invention where -C(O)- corresponds to one of the electronegative groups and -S**- corresponds to the other electronegative group. Galbiati does not teach the method set forth in the instant claims for preparing these polymers. However, the instant claims are product-by-process claims. "Even though product-by-process claims are limited by and defined by the

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process, determination of patentability is based on the product itself. The patentability of a product does not depend on its method of production. If the product in the product-by-process claim is the same as or obvious from a product of the prior art, the claim is unpatentable even though the prior product was made by a different process” In re Thorpe, 777 F. 2d 695, 698, 227 USPQ 964, 966 (Fed. Cir. 1985).

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claims 1-9 and 11-14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Galbiati in view of Quis (US 4 340 707).

For Claims 1-9 and 11-12, Galbiati discloses a process of preparing a Michael polyaddition polymer end-capped with silane groups, *supra*. Galbiati teaches the use of an organic dithio compound for preparing the polymer. (col. 3,

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line 46 to col. 5, line 61 and Examples) Galbiati is silent on the use of sulphydric acid. However, Quis teaches a method of preparing a Michael polyaddition polymer utilizing hydrogen sulfide. The motivation of using hydrogen sulfide instead of polymercaptan (e.g., bis-mercaptans) is that hydrogen sulfide can produce a reaction product free of odor. (col. 2, line 46 to col. 3, line 14)

Therefore, it would have been obvious to one of ordinary skilled in the art at the time of the invention was made to utilize Quis' hydrogen sulfide in Galbiati's process. For Claims 13-14, Quis teaches the use of a basic catalyst (col. 3, lines 8-14) that is further exemplified as a triethylamine. (Example 4)

8. When Claim 14 encompasses the specific embodiment of using DABCO, the following rejection applies.

9. Claims 14-15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Galbiati in view of Quis as applied to Claims 1-8 and 11-12 above, and further in view of Sullivan (US 4 231 956).

Quis teaches the use of a basic catalyst, supra. Galbiati in view of Quis is silent on the specific use of DBU and DABCO. However, Sullivan teaches the use of DBU or DABCO in favor of the traditional catalyst such as triethylamine for a

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Michael reaction involving the use of hydrogen sulfide because the DBU and DABCO are more effective as catalysts. (col. 3, line 19 to col. 4, line 60)

Therefore, it would have been obvious to one of ordinary skilled in the art at the time of the invention was made to utilize DBU or DABU in the process of Galbiati in view of Quis'.

11. Claim 10 is rejected under 35 U.S.C. 103(a) as being unpatentable over Galbiati in view of Quis as applied to Claims 1-8 and 10-12 above, and further in view of Erickson (US 3 397 189).

Galbiati teaches the use of organic compounds that contain at least two double ethylene bonds. (col. 1, lines 4-19) Galbiati further teaches the use of dimethacrylate containing compound, supra. Galbiati is silent on the specific use of a trimethacrylate containing compound set forth in the instant claim. However, Erickson teaches the preparation of a Michael polycondensation polymer utilizing trimethacrylate containing compounds such as tri(meth)acrylate of trimethylolpropane (col. 4, line 51 to col. 5, line 4) Since Galbiati and Erickson are analogous art, one of ordinary skill in the art would look for Erickson's tri(meth)acrylate of trimethylolpropane for Galbiati's compound containing more than two double ethylene bonds.

12. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kuo-Liang Peng whose telephone number is (571) 272-1091. The examiner can normally be reached on Monday-Friday from 8:30 AM to 5:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Randy Gulakowski, can be reached on (571) 272-1302. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


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klp

July 30, 2006

A handwritten signature in black ink, appearing to read 'Kuo-Liang Peng', written in a cursive style.

Kuo-Liang Peng
Primary Examiner
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